

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/577, 742
Source: IFWO
Date Processed by STIC: 08/31/2006

ENTERED



IFWO

RAW SEQUENCE LISTING

DATE: 08/31/2006

PATENT APPLICATION: US/10/577,742

TIME: 08:27:58

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

3 <110> APPLICANT: Finlay, Brett
 4 Gruenheid, Samantha
 5 Deng, Wanyin
 6 Vallance, Bruce
 7 Puente, Jose L.
 9 <120> TITLE OF INVENTION: BACTERIAL VIRULENCE FACTORS AND USES THEREOF
 11 <130> FILE REFERENCE: S&B-0008
 C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/577,742
 C--> 13 <141> CURRENT FILING DATE: 2006-04-27
 13 <150> PRIOR APPLICATION NUMBER: PCT/CA2004/001891
 14 <151> PRIOR FILING DATE: 2004-10-29
 16 <150> PRIOR APPLICATION NUMBER: US 60/515,703
 17 <151> PRIOR FILING DATE: 2003-10-31
 19 <160> NUMBER OF SEQ ID NOS: 84
 21 <170> SOFTWARE: PatentIn version 3.3
 23 <210> SEQ ID NO: 1
 24 <211> LENGTH: 1293
 25 <212> TYPE: DNA
 26 <213> ORGANISM: Citrobacter rodentium
 28 <400> SEQUENCE: 1
 29 atgaacattc aaccgaacat acattccgga atcaccacac agaataatca acaacatcat 60
 31 caccgcagaac aagtgcctgt ctctagctca ataccgcgat cagatttacc tccaaattgc 120
 33 gaagctggat ttgttgtgca tattccagag gatatacagc aacatgtacc ggaatgtggt 180
 35 gaaacaacgg ctctattaag cttgataaaa gatgaaggcc tgctctcagg actagataaa 240
 37 tatcttgctc ctcaccttga agaaggctcc cttgggaaaa aagcattgga tacgtttggt 300
 39 ttattcaatg ttactcaaat ggcattagag ataccagtt ccgttccagg catatctggt 360
 41 aaatatggtg ttcagatgaa cattgtaaaa ccagacatac atccaacaac cgggaactat 420
 43 tttttacagc ttttctctct gcatgacgaa atagggttta acttcaaaga tcttctggtc 480
 45 ccattaaaaa atgcattaac caacagcagt atatcggcta ctgcatcgac tgtagccccc 540
 47 acaccaaacy acccaatgcc atgggttgga ttaactgctc aagtgggttcg taatcatggt 600
 49 gtagaacttc ctatagtcaa aaccgaaaat ggatggaagc ttgtagggga aacacctctt 660
 51 actccagatg gccccaaagc caattatacg gaagaatggg ttatcaggcc gggagaagca 720
 53 gatttttaaat atggaacatc gccattacag gcaactcttg gactggagtt tgggtgcgcat 780
 55 tttaagtggg atttagataa tcctaatacc aaatatgcca tccttaccaa tgctgccgca 840
 57 aatgctattg gtgctgctgg aggggttgcg gtatccaaag tccccggcat agatccaatg 900
 59 ctgtcccctc atgtcgggtg aatgcttggt caagcagcgg ggcattgccg acaatgtaat 960
 61 acccccggat taaagccaga cactatttta tgggtggcag gcgcgacatt tggagctgct 1020
 63 gatttaaata aagccgaatt tgataaagtg cgggttactg actaccctcg tatatggttc 1080
 65 catgcacggg aaggagcttt attcccaaat aagcaagaca ttgcccgtgt aacaggcgca 1140
 67 gacataaaag ctatggaaga aggcgtaccc gttggacatc aacatccaaa accggaggat 1200
 69 gtgggtcatcg atatcgaagg tggcaattca ccacatcata atccatcaaa ttatggtgac 1260
 71 acctttgaaa taatccaaga aacaagggtc taa 1293
 74 <210> SEQ ID NO: 2

(pg-6)

RAW SEQUENCE LISTING

DATE: 08/31/2006

PATENT APPLICATION: US/10/577,742

TIME: 08:27:58

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

75 <211> LENGTH: 1323

76 <212> TYPE: DNA

77 <213> ORGANISM: Enteropathogenic E. coli

79 <400> SEQUENCE: 2

```

80 atgaacattc aaccgatcgt aacatccgga atcaccacac aaaacaatcg acatcatcac      60
82 gcagaacaaa cgtcccctac acaaataccg caatccgaat tacctaattg atgcgaaacg      120
84 ggatttggtt ttcatatccc agaggatatg cagcgacatg caccggaatg cggtgaaaca      180
86 acagctctac tgagcttgat aaaagatgaa ggtctgctct ctgggctgga taaatatctt      240
88 gcacctcatc ttgaagaagg ctctgcagga aaaaaagcat tggatatgtt tggttttattc      300
90 aatgtctctc agatggcatt agaaataccc agcaccgttc cgggtatctc tggtaaatat      360
92 ggtgtccagc taaacattgt aaaaccagat attcatccta catcaggtaa ttatTTTTTA      420
94 cagatattcc ctttgcatag tgaaataggt attaatTTTA aagaccttcc tgggtccatta      480
96 aaaaatgcat taagcaacag caatatacca accactgtat cgactgctgc atccactatt      540
98 gcatcagcca ctacttcgac ggtaaccacc gcgtcaaaag acccaatacc atgggtttgga      600
100 ttaacagctc aagttagttcg taatcatggt gtggaacttc ctatagtcaa aactgaaaaat      660
102 ggatggaagc ttgttgagga aactcctctt actcctgatg gcccacaagc aaattatact      720
104 gaagagtggg tgatcagacc gggagaagca gattttaaat atgggtgcac tccactacag      780
106 gcaactctag ggctggagtt tggcgcacat ttcaagtggg atttagataa ccctaatact      840
108 aaatatgccg ttcttaccaa tgctgccgca aatgcgcttg gtgctgtagg gggatttgca      900
110 gtatccagat ttactggtac agatccaatg ttaagtcttc atatcggtgc aatgggtggg      960
112 caagcagcgg ggcattgccat acagtataat acccccggat taaagccaga cactattTTTA 1020
114 tgggtggcag gtactactct tggactggct gatttaaaca aggccgagtt tggagaggcc      1080
116 agattcactg actatcctcg tatatggtgg catgcaagag aaggtgccat tttcccaaat      1140
118 aaagcagata ttgaacatgc cacaggggct gatatacgcg caatggaaga aggtgtatct      1200
120 gttggacaac ggcattccaaa tccagaggat gtggtcacat atatcgaaag caataactca      1260
122 ccacatcata acccatcaaa ttatgttgat accgttgata taatccaaga aacaagagtc      1320
124 taa
1323

```

127 <210> SEQ ID NO: 3

128 <211> LENGTH: 1326

129 <212> TYPE: DNA

130 <213> ORGANISM: Enterohemorrhagic E. coli

132 <400> SEQUENCE: 3

```

133 atgaacattc aaccgaccat acaatctgga atcacctcac aaaacaatca acatcatcaa      60
135 acagaacaaa taccctctac acaaataccg caatccgaat tacctctagg atgccaaagct      120
137 ggatttggtt ttaatatctc agatgatata cagcaacatg caccggaatg cggtgaaaca      180
139 acagctctac tgagcttgat aaaagataaa ggtctgctct cagggctaga cgaatatata      240
141 gctcctcacc ttgaagaagg atccatagga aaaaaaacat tggatatgtt tggttttattc      300
143 aatgttacct aaatggcatt agagatacct agttccgttt caggcatctc tggtaaatat      360
145 ggtgtccagc taaacattgt aaaaccagat attcatccta catcaggtaa ttatTTTTTA      420
147 cagatattcc ctctgcatag tgaaataggt tttaatTTTA aagaccttcc tggcccgtta      480
149 aaaaatgcat taagcaacag taatatatca accactgcag tgtcgactat tgcacgact      540
151 ggaacatcag ccactacttc gacggtaacc accgagccaa aagacccaat accatggttt      600
153 ggattaacag ctcaagtggg tcgtaatcat ggtgtagaac ttcctatagt caaaactgaa      660
155 aatggatgga agcttggttg agaaacacca ctactcctg atgggccgaa agcaaattac      720
157 acggaggagt gggttatcag accgggagaa gcagattTTTA aatatggtgc atctccatta      780
159 caggcaactc tagggctgga gtttggcgca catttcaagt gggatttaga taaccctaatt      840
161 actaaatagc ccgttcttac caatgctgcc gcaaatgcgc ttggtgcttt agggggattt      900
163 gcagtatcca gatttgcata tacagatcca atgttaagtc ctcatatcgg tgcaatgggt      960
165 gggcaagcag cagggcatgc catacagtat aataccctcg gattaaagcc agacactatt      1020

```

RAW SEQUENCE LISTING

DATE: 08/31/2006

PATENT APPLICATION: US/10/577,742

TIME: 08:27:58

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

```

167 ttatggtggg ctggtgcgac actgggggct gccgatttaa acaaggccga gtttgaagta 1080
169 gctagattca ctgactatcc tcgtatatgg tggcacgcaa gagaaggagc tattttcccc 1140
171 aataaagcag atattgaaca tgccacaggt gctgatatac gcgcaatgga agaaggatc 1200
173 cctgttggac agcggcatcc aaatccagag gatgtggtaa tcgatatcga aagcaatggc 1260
175 ttaccacatc ataatccatc aaatcatgtt gatatctttg atataatcca agaaacaaga 1320
177 gtctaa 1326
180 <210> SEQ ID NO: 4
181 <211> LENGTH: 614
182 <212> TYPE: DNA
183 <213> ORGANISM: Citrobacter rodentium
185 <400> SEQUENCE: 4
186 tattcttttt cagtggtttg aagcaaggcc agagcgatac ggaaaagggtg aagtaccgat 60
188 attgaatacc aaagagcatc cgtatttgag caatattata aatgctgcaa aaatagaaaa 120
190 tgagcgcgta ataggagtag tggtagacgg agactttact tatgagcaaa gaaaagaatt 180
192 tctcagtcct gaagatgaac atcaaaatat aaagataata tatcgggaaa atgttgattt 240
194 cagtatgtat gataaaaaac tgtctgatat ttatcttgaa aatattcatg aacaagaatc 300
196 atatccagcg agtgagagag ataattatct gttaggctta ttaagagaag agttaaaaaa 360
198 tattccatac ggaaaggact ctttgattga atcatatgca gaaaaaagag gtcatacttg 420
200 gtttgatttt tttagaaact tggcgggtatt gaagggggggg gggttgttta cagagacggg 480
202 taaaactgga tgccataaca tatctccatg tgggggatgt atatatcttg atgcagatat 540
204 gattattact gataaattag gtgtcctgta tgctcctgat ggtatcgtg tgcagttaga 600
206 ttgtaatgat gaga 614
209 <210> SEQ ID NO: 5
210 <211> LENGTH: 555
211 <212> TYPE: DNA
212 <213> ORGANISM: Citrobacter rodentium
214 <400> SEQUENCE: 5
215 aaggccagag cgatacggaa aaggtgaagt accgatattg aataccaaag agcatccgta 60
217 tttgagcaat attataaatg ctgcaaaaat agaaaatgag cgtaatggag tactggtaga 120
219 cggagacttt acttatgagc aaagaaaaga atttctcagt cttgaagatg aacatcaaaa 180
221 tataaagata atatatcggg aaaatggttg tttcagtagt tatgataaaa aactgtctga 240
223 tattttatctt gaaaatatct atgaacaaga atcatatcca gcgagtgaga gagataatta 300
225 tctgttggtt ttaagagaag agttaaaaaa tattccatac ggaaaggact ctttgattga 360
227 atcatatgca gaaaaaagag gtcatacttg gtttgatttt tttagaaact tggcgggtatt 420
229 gaaggggggg gggttgttta cagagacggg taaaactgga tgccataaca tatctccatg 480
231 tgggggatgt atatatcttg atgcagatat gattattact gataaattag gtgtcctgta 540
233 tgctcctgat ggtat 555
236 <210> SEQ ID NO: 6
237 <211> LENGTH: 990
238 <212> TYPE: DNA
239 <213> ORGANISM: Enteropathogenic E. coli
241 <400> SEQUENCE: 6
242 atgttatctt cattaaatgt ccttcaatcc agcttcagag gaaagacagc tttatcaaat 60
244 agtacacttc tccagaaagt ttcttttgct ggaaaagaat atttctctgga acctattgat 120
246 gaaagaaccc ctattctttt tcagtggttt gaagcaaggc cagagcgata cgaaaaagga 180
248 gaagtaccaa tattgaatac caaagaacat ccgtatttga gcaatattat aaatgctgca 240
250 aaaatgaaa atgagcgtat aatcgggtgt ctggtagatg gaaattttac ttatgaacaa 300
252 aaaaagggaat ttctcaatct tgaaaatgaa catcaaaata taaaaataat ctaccgagca 360
254 gatgtggatt tcagcatgta tgataaaaaa ctatctgata tttaccttga aaatatccat 420

```

RAW SEQUENCE LISTING

DATE: 08/31/2006

PATENT APPLICATION: US/10/577,742

TIME: 08:27:58

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

```

256 aaacaagaat cataccctgc cagtgaagagg gataattatc tgtaggctt attaagagaa 480
258 gagttaaaaa atatcccaga aggtaaggac tctttgattg agtcatatgc agaaaaaaga 540
260 gaacataactt ggtttgattt ttccaggaat ttggccatat tgaaggctgg aagtttgttt 600
262 acagagacgg gaaaaactgg atgccataac atatcgccct gtagcggatg tatatatctt 660
264 gatgccgaca tgattattac cgataaatta ggagtcctgt atgctcctga tggatcgcct 720
266 gtgcatgtag attgtaataa tgagataaaa agtcttgaaa atggtgcatg agttgtcaat 780
268 cgtagtaatc atccagcatt acttgcaggc ctcatatta tgaagagtaa agttgacgct 840
270 catccatatt atgatggtct aggaaggggt atcaagcggc attttaacta ttcacgttta 900
272 cacaattata atgctttttg tgattttatt gaatttaagc atgaaaatat tataccgaat 960
274 accagtatgt ataccagcag ttcatggtaa 990

```

277 <210> SEQ ID NO: 7

278 <211> LENGTH: 990

279 <212> TYPE: DNA

280 <213> ORGANISM: Enterohemorrhagic E. coli

282 <400> SEQUENCE: 7

```

283 atgttatctt cattaaatgt ccttcaatcc agcttcagag gaaagacagc tttatcaaata 60
285 agtacacttc tccagaaagt ttcttttgct ggaaaagaat atcctctgga acctattgat 120
287 gaaaaaaccc ctattctttt tcagtggttt gaagcaaggc cagagcgata cgaaaaagga 180
289 gaagtaccaa tattgaatac caaagaacat ccgtatttga gcaatattat aaatgctgca 240
291 aaaatagaaa atgagcgtat aatcgggtgt ctggtagatg gaaattttac ttatgaacaa 300
293 aaaaaggaat ttctcagtct tgaaaatgaa tatcaaaata taaaaataat ctaccgagca 360
295 gatgtggatt tcagcatgta tgataaaaaa ctatctgata tttaccttga aaatatccat 420
297 aaacaagaat cataccctgc cagtgaagagg gataattatc tgtaggctt attaagagaa 480
299 gagttaaaaa atatcccaga aggtaaggac tctttgattg agtcatatgc agaaaaaaga 540
301 gaacataactt ggtttgattt ttccaggaat ttggccatat tgaaggctgg aagtttgttt 600
303 acagagacgg gaaaaactgg atgccataac atatcgccct gtagcggatg tatatatctt 660
305 gatgccgaca tgattattac cgataaatta ggagtcctgt atgctcctga tggatcgcct 720
307 gtgcatgtag attgtaataa tgagataaaa agtcttgaaa atggtgcatg agttgtcaat 780
309 cgtagtaatc atccagcatt acttgcaggc ctcatatta tgaagagtaa agttgacgct 840
311 catccatatt atgatggtct aggaaggggt atcaagcggc attttaacta ttcacgttta 900
313 caccattata atgctttttg tgattttatt gaatttaagc atgaaaatat tataccgaat 960
315 accagtatgt atacctgcag ttcatggtaa 990

```

318 <210> SEQ ID NO: 8

319 <211> LENGTH: 993

320 <212> TYPE: DNA

321 <213> ORGANISM: Citrobacter rodentium

323 <400> SEQUENCE: 8

```

324 atgaaaattc cctcactcca gccagcttc aactttttcg cccagcagg atactctgct 60
326 gccgttgctc ccaatcgctc ggacaatgcc tatgctgatt acgtattgga tataggcaag 120
328 cgaataccac tttccgcgga agatttaggc aacctatatg aaaatgtcat tcgcgccgtt 180
330 cgtgacagcc gtagcaagct catagatcag catagcgtcg atatgattgg taacactata 240
332 cttgatgctt tgagccgatc acaaaccttt cgtgatgccg taagctatgg cattcataat 300
334 aaggaggtag acattgggtg cattaaatac agaaacgaat acgagctcaa cggagaatcc 360
336 cccgtcaaag ttgatgatat tcaatcacta acctgtaccg aattatatga atacgatgtc 420
338 gggcaagaac caattttacc catttgcgag gcaggagaaa acgataacga agagccttat 480
340 gtcagtttta gtgttgccgc agatactgac tcttatgaga tgccatcgtg gcaggagggt 540
342 ctgattcacg agattattca tcatgtgact ggagctagcg atccgtctgg agatagtaat 600
344 atagagctag gaccacgga gattctcgca cgtcgtgtcg ctcaagagct gggatggact 660
346 gtccccgact tcataggata tgcagagcca gatcgtgaag ctcatcttag gggacgtaac 720

```

RAW SEQUENCE LISTING

DATE: 08/31/2006

PATENT APPLICATION: US/10/577,742

TIME: 08:27:58

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

```

348 ctgaatgccc ttcgacaggc ggccatgcga catgaagata atgagaggac tttcttcgaa      780
350 aggctgggta tgatcagtga tcgatatgag gcgagtcctg atttcacaga gtattccgct      840
352 gtgtctaaca tagaatatgg atttatccag caacatgatt ttcccgggtt ggctatcgac      900
354 gataattttac aggatgcaaa tcagatccaa ctctatcatg gagcacctta tatctttaca      960
356 ttcgggggatg tggacaaaca caatcagcgc tga                                  993
359 <210> SEQ ID NO: 9
360 <211> LENGTH: 993
361 <212> TYPE: DNA
362 <213> ORGANISM: Enteropathogenic E. coli
364 <400> SEQUENCE: 9
365 atgaaaattc cctcattaca gtccaacttc aactttttccg ccccggcagg atactctgct      60
367 cccattgctc ctaatcgtgc tgaaaatgcc tatgcggtt acgtttttgga tataggtaag      120
369 cgaataccac tttccgcagc agatttaagc aacgtatacg aaagtgtaat acgcgccgctc      180
371 catgacagcc gtagcaggct tatcgatcag catacagtcg atatgatcgg caacactgta      240
373 cttgatgctt tgagccgata acagacattt cgtgatgccg taagctatgg cattcataat      300
375 gagaaggtag acattgggtg cattaaatac agaaacgaat acgagcttaa cgaagaatct      360
377 tctgtcaaaa ttgatgatat tcaatcacta acctgtaacg aattatatga atatgatgtc      420
379 gggcaagagc caattttccc catttgcgaa gcaggagaaa acgataacga agagccttat      480
381 gtcagtttta gtgttgccgc agatactgac tcttatgaga tgccatcgtg gcaggaagga      540
383 ctgattcacg agattattca tcatgttact ggatctagcg atccatctgg agatagtaat      600
385 atagagttag gacccaccga gattctcgca cgtcgtgtcg ctcaagaact gggatggagt      660
387 gttcccgaact tcaaaggata tgcagagcca gaacgtgaag ctcatcttag gttacgtaac      720
389 ctgaatgccc ttcgacaggc tgccatgagg catgaagaga atgagagggc tttcttcgaa      780
391 aggctgggta cgatcagtga ccgatatgag gcgagtcctg atttcacaga gtattccgct      840
393 gtgtctaaca taggatacgg atttatccag caacatgatt ttccctggatt ggctatcaac      900
395 gataattttac aggatgcaaa tcagatccaa ctgtatcatg gcgcccctta tatttttaca      960
397 tttgggggatg tggacaaaca caatcagcga tga                                  993
400 <210> SEQ ID NO: 10
401 <211> LENGTH: 993
402 <212> TYPE: DNA
403 <213> ORGANISM: Enterohemorrhagic E. coli
405 <400> SEQUENCE: 10
406 atgaaaattc cctcattaca gtccaacttc aactttttccg ccccggcagg atactctgct      60
408 cccattgctc ctaatcgtgc tgaaaatgcc tatgcggtt acgtttttgga tataggtaag      120
410 cgaataccac tttccgcagc agatttaagc aacgtatacg aaagtgtaat acgcgccgctc      180
412 catgacagcc gtagcaggct tatcgatcag catacagtcg atatgatcgg caacactgta      240
414 cttgatgctt tgagccgata acagacattt cgtgatgccg taagctatgg cattcataat      300
416 gagaaggtag acattgggtg cattaaatac agaaacgaat acgagcttaa cgaagaatct      360
418 tctgtcaaaa ttgatgatat tcaatcacta acctgtaacg aattatatga atatgatgtc      420
420 gggcaagagc caattttccc catttgcgaa gcaggagaaa acgataacga agagccttat      480
422 gtcagtttta gtgttgccgc agatactgac tcttatgaga tgccatcgtg gcaggaagga      540
424 ctgattcacg agattattca tcatgttact ggatctagcg atccatctgg agatagtaat      600
426 atagagttag gacccaccga gattctcgca cgtcgtgtcg ctcaagaact gggatggagt      660
428 gttcccgaact tcaaaggata tgcagagcca gaacgtgaag ctcatcttag gttacgtaac      720
430 ctgaatgccc ttcgacaggc tgccatgagg catgaagaga atgagagggc tttcttcgaa      780
432 aggctgggta cgatcagtga ccgatatgag gcgagtcctg atttcacaga gtattccgct      840
434 gtgtctaaca taggatacgg atttatccag caacatgatt ttccctggatt ggctatcaac      900
436 gataattttac aggatgcaaa tcagatccaa ctgtatcatg gcgcccctta tatttttaca      960
438 tttgggggatg tggacaaaca caatcagcaa tga                                  993

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/577,742

DATE: 08/31/2006
TIME: 08:27:59

Input Set : F:\S&B-0008.ST25.txt
Output Set: N:\CRF4\08312006\J577742.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:35; Xaa Pos. 208

Seq#:59; Xaa Pos. 9

Seq#:66; N Pos. 439

Seq#:78; Xaa Pos. 147

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/577,742

DATE: 08/31/2006

TIME: 08:27:59

Input Set : F:\S&B-0008.ST25.txt

Output Set: N:\CRF4\08312006\J577742.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1958 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:192
L:2704 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0
L:2916 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66 after pos.:420
L:3423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:78 after pos.:144